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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



nier v		Application Number	10/510,357
TRANSMITTAL	_	Filing Date	October 5, 2004
FORM	_	First Named Inventor	Jing Hua Teng et al.
(to be used for all correspondence after initial	al filing)	Group Art Unit	2812
		Examiner Name	
Total Number of Pages in This Submission (including this sheet)	51	Attorney Docket No.	3136.ARTH.PT

	ENCLOSURES (check all that apply)	
□ Amendment / Response □ After Final □ Affidavits/declaration(s) □ Appeal Communication: □ Appeal Notice □ Appeal Brief □ Reply Brief □ Assignment with Cover Sheet □ Certified Copy of Priority	□ Extension of Time Request ——month □ Fee Calculation Table □ Information Disclosure Statement □ Form 1449 □ Copies of IDS References □ Issue Fee Transmittal & Advance Order	□ Maintenance Fee Transmittal
□ Certified Copy of Priority     □ Document(s)      □ Check in the amount of \$      □ Credit card authorization in the amount of \$      □ Declaration & Power of Attorney      □ Drawings sheets     □ Formal □ Informal	Remarks	
SIGN	ATURE OF APPLICANT, ATTORNEY OR A	GENT
Attorney for Applicant  Julie K.  MORRI  136 So  Salt Lal	Morriss, Registration No. 33,263 SS O'BRYANT COMPAGNI, P.C. uth Main Street, Suite 700 ke City, Utah 84101 78-0071 telephone; (801) 478-0076	
Signature Little 1	Muss	Date 5-24-05
CE	RTIFICATE OF MAILING UNDER 37 CFR §	j 1.8
first class mail, on the date indicat	pondence is being deposited with the delow, in an envelope addressed ox 1450, Alexandria, VA 22313-145	d to Mail Stop Amendment,
Typed or Printed Name Julie	K. Morriss	
Signature & Wu IL	Muss	Date 5-24-05



## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:

Jing Hua Teng et al.

**SERIAL NO.:** 

10/510,357

FILING DATE:

October 5, 2004

TITLE:

METHOD FOR FORMING A

MODIFIED SEMICONDUCTOR HAVING A PLURALITY OF BAND

**GAPS** 

**ART UNIT:** 

2812

**EXAMINER:** 

**DOCKET NO.:** 

3136.ARTH.PT

CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail, postage prepaid, under 37 C.F.R. § 1.8 on the date indicated below and is addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Julie K. Morriss

Data of Deposit

## SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.97(b)

Mail Stop Amendment Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Sir:

Pursuant to 37 C.F.R. § 1.98(a)(1), enclosed is Form PTO-1449 which contains a list of all patents, publications, or other items that have come to the attention of one or more of the individuals designated in 37 C.F.R. § 1.56(c). Applicants respectfully submit that this Information Disclosure Statement is filed, pursuant to 37 C.F.R. § 1.97 (b), within three months of the filing date of the application, within three months of the date of entry of the national stage set forth in § 1.491or before the mailing date of a first Office action on the merits. Applicants request that the references cited in the enclosed form PTO-1449 be made of record in the above-captioned application. While no representation is made that any of the references may be "prior art" within the meaning of that term under 35 U.S.C. §§ 102 or 103, the enclosed list of references is disclosed so as to fully comply with the duty of disclosure set forth in 37 C.F.R. § 1.56.

Moreover, while no representation is made that a specific search of office files or patent office records has been conducted or that no better art exists, the undersigned attorney of record believes that the references listed, together with any other references which may have been previously submitted or listed, are the closest to the claimed invention (taken in its entirety) of which the undersigned is presently aware, and no reference which is more relevant to the claimed invention (taken in its entirety) has been knowingly withheld.

In accordance with the waiver of 37 C.F.R. § 1.98(a)(2)(i) published in the Official Gazette on August 5, 2003 for U.S. patent applications filed after June 30, 2003, copies of each cited U.S. patent and each U.S. patent application publication are not enclosed. Applicants have submitted copies of foreign patent documents and non-patent literature in accordance with 37 C.F.R. § 1.98 (a)(2). Any listed reference that is not in the English language is accompanied by a concise explanation in English of its relevance as required under 37 C.F.R. § 1.98(a)(3)(i).

Please charge any additional fees or credit any overpayment to Deposit Account No. 50-0881.

DATED this 24th day of May, 2005.

Respectfully submitted,

Lulei Il Muns

Julie/K. Morriss

Attorney for Applicants

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Substitute for form PTO-1449	Complete if Known	
, INFORMATION DISCLOSURE	<b>Application Number</b>	10/510,357
STATEMENT BY APPLICANT	Filing Date	October 5, 2004
OIPE	First Named Inventor	Jin Hua Teng et al.
(use dismany sheets as necessary)	Group Art Unit	2812
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Sheet 2 1 of 2	Attorney Docket	3136.ARTH.PT

	CONTRA	STEP STEP STEP STEP STEP STEP STEP STEP	U.S. PATENT DC	CUMENTS	
Examiner Initials*	Cite No.¹	Document Number  Number-Kind Code² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-6,005,881	12-21-1999	Ikoma	
		US-5,915,165	06-22-1999	Sun et al.	
		US-5,886,370	03-23-1999	Sun et al.	
•		US-5,843,802	12-01-1998	Beernink et al.	
		US-5,832,019	11-03-1998	Paoli et al.	
		US-5,815,522	09-29-1998	Nagai	
		US-5,766,981	06-16-1998	Thornton et al.	
		US-5,764,669	06-09-1998	Nagai	
		US-5,757,023	05-26-1998	Koteles et al.	
		US-5,708,674	01-13-1998	Beernink et al.	
		US-5,399,900	03-21-1995	Ko et al.	
		US-4,865,923	09-12-1989	Ralston et al.	J.
		US-4,731,338	03-15-1988	Ralston et al.	
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			FOREIGN PATENT DO	CUMENTS		
Examiner Initials*	Cite No.¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	Τ°
		Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)				Ш
			V			

Examiner Date Considered Signature

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional).

2 See Kinds Codes of USPTO Patent Documents at <a href="www.uspto.gov">www.uspto.gov</a> or MPEP 901.04.

3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

4 Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

5 Kind document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible.

6 Applicant is to place a check mark here if English language translation is attached.

Substitute for form PTO-1449				Complete if Known		
, INFO	RMATION DIS	CLO	SURF	<b>Application Number</b>	10/510,357	
STA <sup>*</sup>	TEMENT BY A	PPLIC	ANT ®	Filing Date	October 5, 2004	
			2 1 9995	First Named Inventor	Jin Hua Teng et al.	
(use as many sheets as necessary) MAY 3 1 2005			MAT 3 1 EGGS	Group Art Unit	2812	
1.000.00		F)		Examiner Name		
Sheet	2	of	Con 2 Enter	Attorney Docket	3136.ARTH.PT	

		OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS
xaminer nitials*	Cite No. 1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s) publisher city and/or country where published
		DEPPE, D.G. et al., "Atom diffusion and impurity-induced layer disordering in quantum well III-V semiconductor heterostructures." J. Appl. Phys. Vol 64 (12), December 15, 1988, pp. R93-113
		OOI, BOON SIEW et al., "Selective Quantum-Well Intermixing in GaAs-AlGaAs Structures Using Impurity-Free Vacancy Diffusion." <u>leee Journal of Quantum Electronics</u> , Vol. 33, No. 10, October 1997, pp.1784-1793.
		CHOI, W.J. et al., "Dependence of Dielectric-Cap Quantum-Well Disordering of GaAs-AlGaAs Quantum-Well Structure on the Hydrogen Content in SiN <sub>x</sub> Capping Layer." <u>leee Journal of Selected Topics in Quantum Electronics</u> , Vol. 4, No. 4, July/August 1998, pp. 624-628.
		TENG, J.H. et al., "Control of the band-gap shift in quantum-well intermixing using a germanium interlayer." <u>Applied Physics Letters</u> . Vol 76, No. 12, March 20, 2000, pp. 1582-1584.
		MARSH, J.H. et al., "Quantum well intermixing in material systems for 1.5 μm (invited)." J. Vac. Sci. Technol. A Vol. 16(2), Mar/Apr 1998, pp. 810-816.
•••••		
Examiner		Date Considered

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